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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,007	10/02/2003	Syuichi Yano	038917.44952C1	6423

23911 7590 04/06/2004

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EXAMINER

PEAVEY, ENOCH E

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/676,007

**Applicant(s)**

YANO ET AL.

**Examiner**

Enoch E Peavey

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2 October 2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

I. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JPHE13-77093 (JPHE 93) in view of Yamagishi et al., US Patent No. 6,003,876, (Yamagashi) and JP Doc. No. 4-89892 (JP 892).

1. JPHE 93 discloses a bearing seal for a water pump disposed within a casing of the water pump and in contact with additives contained in a cooling water circulated by the water pump wherein the bearing seal ring comprises an outer ring formed within the casing (see fig.

1). There is a rotary shaft (10) equipped with a drive portion at one end portion and an impeller at another end portion (see fig. 1).

2. The rotary shaft is free to rotate within the outer ring with rolling elements located therebetween (see fig. 2). The seal body is fixed to each end of the outer ring in the axial direction. There is a sealing groove provided in each axial end portion of the outer ring. The sealing ring can be attached by caulking into each of the grooves of the outer ring. The sealing ring can be attached by press fitting into each sealing groove of the outer ring (see fig. 2).

3. The seal body comprises a metal core member (151), a main lip oriented outward in the axial direction, a first sub-lip which is oriented inward in the axial direction (1513), and a second sub-lip positioned further outward in the radial direction than the main lip and which extends

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outward in the axial direction. The main lip, first sub-lip, second sub-lip, and metal core are formed integrally.

4. There is a flinger (152) disposed on the impeller side of the rotary shaft (12) comprising a small circular cylinder (1521) engaging with and fixed to the rotary shaft. The large circular cylinder (1525) encompasses the small circular cylinder (1521) in a coaxial manner linked together by a flange portion.

5. The main lip (1513) is in contact with an outer periphery surface of the small circular cylinder (1521), the second sub-lip (1514) is in contact with an outer periphery surface of the large circular cylinder (1525), and the first sub-lip (1512) is in contact with an outer periphery surface of the rotary shaft (12).

6. There is a gap defined between an inner end of the outer ring and an outer periphery of the metal core member disposed toward the sealing groove (FIG. 8). The outer edge of the sealing material is disposed over the outer periphery of the metal core (53b), the outer edge of the seal body extends beyond an outer periphery of the metal core.

7. An inner diameter of an inner end of the outer ring is larger than an outer diameter of an outer periphery of the metal core member (i.e. the outer periphery of the metal core sets within the outer ring, making the bottom of the inner end of the outer ring (i.e. the bottom of the groove) larger than the outer periphery of the metal core).

8. JPHE 93 does not disclose the seal body being formed of hydrogenated nitrile rubber or the outer edge of the seal body (53) being firmly press fitted into the sealing groove (FIG. 8). Yamagashi teaches a seal body for a water pump seal (cols. 11 and 12, table 5, water pump bearing seal) which can be made of hydrogenated nitrile rubber to solve the problem of heat resistance (col. 3 lines 19-24) and JP 892 teaches a seal body press fitted (Fig. 8) into the groove to maintain a sealed relationship between the outer surface and the seal.

9. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify JPHE 93 with the hydrogenated nitrile rubber of Yamagashi and the press-fit of JP 892. Doing so would provide the seal with improved resistance to heat and improved sealing between the outer surface and the seal.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enoch E Peavey whose telephone number is 305 1977. The examiner can normally be reached on Mon-Fri 8:00 am to 4:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (703) 308- 3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Enoch E Peavey  
Art Unit 3676

April 1, 2004

